

# Natural Heritage Resources Fact Sheet

## Conserving Virginia's Natural Communities...Why?

### Natural Communities

The natural environments of Virginia contain a wondrous array of plants and animals, and each environment has its distinctive community of life. The term *community* refers to species that occur together. It has the same meaning in the natural world as in our own lives. Just as in human communities, each organism plays an important role in the functioning of the whole system and all the parts are interconnected.

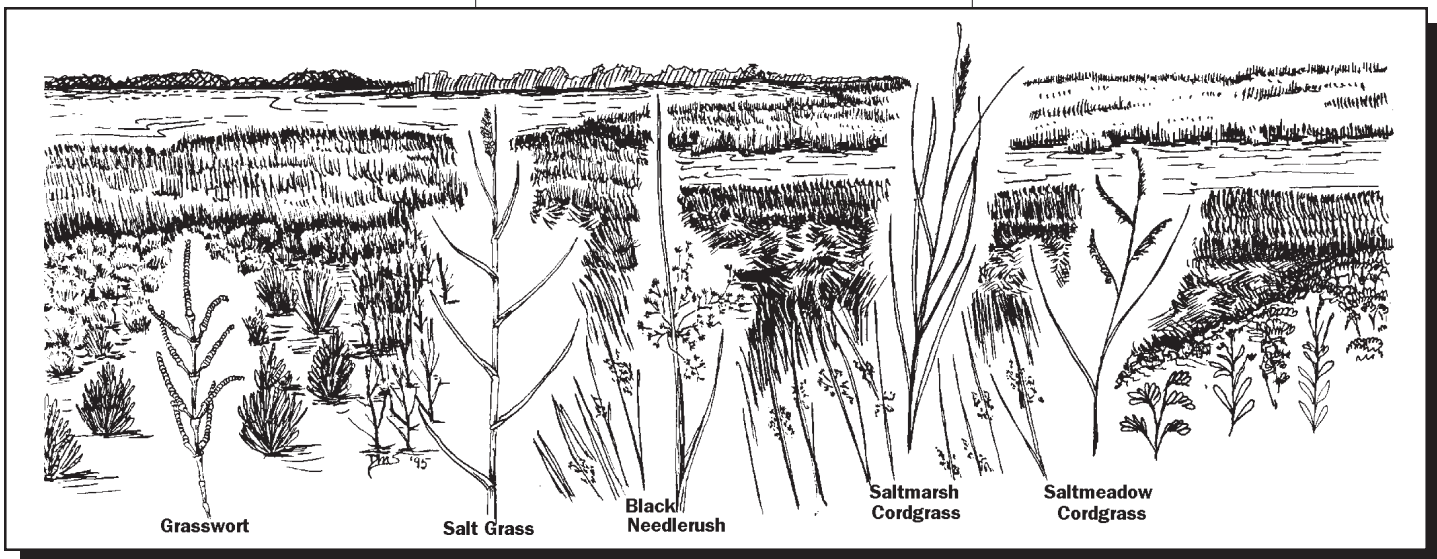
Over thousands of years, the species in each community have developed life history strategies which enable them to survive within a specific niche. This process does not take place in a vacuum — the strategies adopted by one species influence the direction taken by

others — nor has the evolutionary process stopped. Like a river that flows through time and space, a natural community undergoes constant change yet retains essential characteristics. For instance, all plants growing in an area compete with one another for available light, moisture and nutrients. Plants which die are soon replaced by others. Also, like humans, plants change their environment as they live in it. They can affect fertility by contributing organic matter to the soil, thereby influencing the robustness and density of the vegetation. When a community is disturbed by wind, fire, floods or human activity, opportunistic plants are the first to recolonize the area, but these are soon replaced by larger or more long-lived species. This is a process known as vegetation succession.

### Interdependence

Many plants depend on insects for pollination or rely on birds and mammals to disperse seed. Some plants produce seeds within sweet, fragrant or brightly colored fruit. When consumed by birds and mammals, these seeds remain viable and are expelled in nutrient-rich droppings at a new location. Other plants have seeds which hitchhike across the landscape by clinging to animal fur or even human clothing.

Animals, including ourselves, are absolutely dependent on plants. Among the 30,000 insect species in Virginia, many feed on a single plant species or genus. Animals either consume plants directly, prey on herbivores (plant eaters) or prey on predators of herbivores, thus forming complex food chains.



*Plant species characteristic of different salt marsh communities.*



Department of Conservation & Recreation  
CONSERVING VIRGINIA'S NATURAL AND RECREATIONAL RESOURCES

For more information, contact  
Department of Conservation and Recreation  
203 Governor Street, Richmond, VA 23219  
(804) 786-7951; <http://www.state.va.us/~dcr/vaher.html>

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### Community Classification

As you travel across Virginia, you can recognize the major types of natural communities by the plants and animals that live there. The shifting sands of coastal dunes support windswept meadows of beach grass and sea-oats. Towering cypress trees dominate the silty river bottoms on the coastal plain, while alder and sycamore prevail alongside mountain streams. Often the vegetation reflects the underlying geology. Mountain slopes dominated by pine and oak usually indicate acidic soils derived from shale and sandstone, while sugar maple, tulip-tree, basswood and buckeye often indicate limestone. Elevation has a dramatic effect on vegetation, as any visitor to Mount Rogers, Virginia's highest mountain, can attest.

Specific communities are classified based on the dominant or characteristic species present. Examples are *chestnut oak - mountain laurel forest* and *longleaf pine - turkey oak woodland*. By naming community types, we communicate information more effectively and can inventory the best examples of each. Some community types are widespread because conditions which create them are present over large areas. Other communities are restricted to just a few areas simply because the natural environments upon which they depend are so rare on the landscape.

### Values

Scientists recognize that the destruction of natural communities can hurt us as well as the natural world. We, too, depend on the *ecosystem services* which natural communities provide. Vegetation filters and holds water to ensure a clean and reliable water source, removes carbon dioxide from the atmosphere and restores oxygen, holds soil and helps maintain fertility, and can provide renewable forest products and forage for livestock. To a great extent, the economy of coastal Virginia is directly dependent on a productive and uncontaminated Chesapeake Bay ecosystem.

Animals also play a part in providing ecosystem services. Often overlooked but vitally important is the role played by beneficial insects which pollinate fruit trees and many crops and keep pest organisms in check at virtually no cost to society. Predatory birds such as hawks and owls that nest in natural lands help maintain the *balance of nature* by controlling the populations of harmful rodents in adjacent farm lands. Bats, which may reside in a cave or the hollow of a tree, consume vast numbers of mosquitoes on warm summer nights.

On another level, recent studies in psychology demonstrate that natural communities have great stress-reducing effects for people

who visit or even view them from a distance. Many psychologists are currently investigating other psychological benefits that come from contact with nature and natural areas.

### Conservation

Species entirely new to science are still being found in the Commonwealth, and others are being rediscovered which had not been documented in many years. By protecting the best remaining natural environments, we most assuredly will be protecting a host of poorly known species whose roles in the ecosystem and whose value to human society have yet to be understood. We can be encouraged, however, that Virginians care deeply about preserving our beautiful land and that our citizens are striving to ensure that the natural heritage in our care will be passed on to future generations.

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To learn more about Virginia's rare plant and animal species and rich biological communities write to the following: *Plant and Insect Species* - Virginia Department of Agriculture and Consumer Services, Office of Plant Protection, P.O. Box 1163, Richmond, Virginia 23209; *Animal Species* - Virginia Department of Game and Inland Fisheries, P.O. Box 11104, Richmond, Virginia 23230; *Plants, Animals, or Biological Communities* - Virginia Department of Conservation and Recreation, Division of Natural Heritage, Main Street Station, 1500 East Main Street, Suite 312, Richmond, Virginia 23219.

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